UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,753	01/22/2002	Lester F. Lau	05031.003.CNUS02	6127

22930 7590 10/06/2004

HOWREY SIMON ARNOLD & WHITE LLP
ATTEN: MARGARET P. DROSOS, DIRECTOR OF IP ADMIN
2941 FAIRVIEW PARK DR, BOX 7
FALLS CHURCH, VA 22042

EXAMINER	
WOITACH, JOSEPH T	

ART UNIT	PAPER NUMBER
1632	

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/053,753	LAU, LESTER F.	
	Examiner	Art Unit	
	Joseph T. Woitach	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *65-77* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *65-77* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This application filed January 22, 2002, is a continuation of 09/142,569, filed April 2, 1999, now US Patent 6,413,735, which is a national stage entry of PCT/US97/04193, filed March 14, 1997, which claims priority to provisional application 60/013,958.

Applicant's amendment filed July 19, 2004, has been received and entered. Claims 1-64 have been canceled. Claims 70-74 have been amended. Claims 75-77 have been added. Claims 65-77 are pending and currently under examination.

Election/Restrictions

Applicant's election without traverse of the species of SEQ ID NO: 4 and fragments thereof in the reply filed on July 19, 2004 is acknowledged. Upon reconsideration of the restriction requirement, it has been determined that it would not be an undue burden to examine each of the species together. More importantly, an antibody that binds SEQ ID NO: 4 would invariably bind altered forms of this sequence as well, anticipating the other species or at least making the obvious over SEQ ID NO: 4. The restriction requirement for election of species is withdrawn.

It is noted that newly added claim 75 is dependent on claims 65-69, therefore is encompassed by the invention as previously claimed. Newly added claims 76 and 77 recite two different products, a pharmaceutical composition and a kit, however the only specific requirement of each is the presence of an antibody that binds Cyr61, therefore they will be examined together with the present invention.

Specification

The nucleotide sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825. Applicant's attention is directed to the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998).

There are several sequences are set forth in figure 1, however there is not sequence identifier in the drawing nor the brief description of the drawings. In addition, review of the specification has identified nucleic acid sequences without sequence identifiers that do not appear to be in the sequence listing, for example page 23, lines 19 and 26. Identification of all of the sequences in the disclosure with an appropriate sequence identifier is required as set forth in 37 CFR 1.821-1.825.

Appropriate correction is required.

The absence of proper sequence listing did not preclude the examination on the merits however, **for a complete response to this office action, applicant must submit the required material for sequence compliance.**

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 66, 67-77 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically:

Claim 66 is indefinite because the metes and bounds of the terms variant, analog, homolog and derivative are not clearly defined in the specification nor the art of record. The artisan can not determine the metes and bounds of the claims because how different or similar a sequence has to be to SEQ ID NO: 4 is not specifically defined. Claims 68-77 depend from claim 66 and fail to clarify the basis of the rejection.

Claims 67 is vague and unclear because the claim does not set forth specifically what the fusion protein comprises or what the antibody binds. For example it is unclear if the claim encompasses an antibody that binds to betagalactosidase of a betagalactosidase-Cyr61 fusion protein. More clearly setting forth the nature of the fusion protein and/or the specificity of the antibody will address the basis of the rejection. Claims 68-77 depend from claim 66 and fail to clarify the basis of the rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 65-69, 75-77 are rejected under 35 U.S.C. 102(b) as being anticipated by O'Brien *et al.* (IDS ref C24).

O'Brien *et al.* characterize the expression of Cyr61 in cells. More specifically, O'Brien *et al.* teach antibodies that can be used for immuno-precipitation and Western blotting (see for example the results of Figure 7, page 3575). The Cyr61 sequence analyzed is disclosed in figure 1, and homology comparisons of the sequence taught by O'Brien *et al.* and that of SEQ ID NO: 4 indicate extensive homology. Moreover, O'Brien *et al.* teach that the Cyr61 protein isolated and characterized from other species also share extensive homology (also see sequence comparison provided in figure 1 of the present disclosure). Because of the extensive homology of Cyr61, antibodies that bind one species would likely bind that of other homologous sequences.

Where, as here, the claimed and prior art products have identical functional properties, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. See *In re Ludtke* 441 F.2d 660, 169 USPQ 563 (CCPA 1971). Whether the rejection is based on "inherency" under 35 USC 102, or "prima facie obviousness" under 35 USC 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products. *In re Best, Bolton, and Shaw*, 195 USPQ 430, 433 (CCPA 1977) citing *In re Brown*, 59 CCPA 1036, 459 F.2d 531, 173 USPQ 685 (1972). In this case, relying on the immunity of a host animal to generate antibodies to a protein administered to said host would result in antibodies to the same antigen. Based on the extensive homology of Cyr61 proteins known in the art, this method would result in antibodies that would recognize Cyr61 from multiple species.

Claims 65-69, 75-77 are rejected under 35 U.S.C. 102(b) as being anticipated by Yang *et al.* (IDS ref C29).

Yang *et al.* characterize the expression of Cyr61 in cells. More specifically Yang *et al.* teach antibodies that can be used for Western blotting (see for example the results of Figures 1 and 5). The Cyr61 sequence analyzed is disclosed in cited reference 10, and shares extensive homology with other known Cyr61 proteins known in the art (see sequence comparison provided in figure 1 of the present disclosure). Because of the extensive homology of Cyr61, antibodies that bind one species would likely bind that of other homologous sequences.

Where, as here, the claimed and prior art products have identical functional properties, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. See *In re Ludtke* 441 F.2d 660, 169 USPQ 563 (CCPA 1971). Whether the rejection is based on "inherency" under 35 USC 102, or "prima facie obviousness" under 35 USC 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products. *In re Best, Bolton, and Shaw*, 195 USPQ 430, 433 (CCPA 1977) citing *In re Brown*, 59 CCPA 1036, 459 F.2d 531, 173 USPQ 685 (1972). In this case, relying on the immunity of a host animal to generate antibodies to a protein administered to said host would result in antibodies to the same antigen. Based on the extensive homology of Cyr61 proteins known in the art, this method would result in antibodies that would recognize Cyr61 from multiple species.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 65-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brien *et al.* or Yang *et al.* and Hoogenboom *et al.* (US Patent 5565332 A).

Claims 65-69, 75-77 are reviewed above. Briefly, both O'Brien *et al.* or Yang *et al.* teach antibodies that bind to Cyr61 that anticipate the antibody encompassed by claims 65-69, 75-77. However, neither O'Brien *et al.* or Yang *et al.* discuss specifically modifying the antibodies for any further use. At the time of filing methods to make chimeric CDR antibodies to make a "humanized" antibody from antibodies generated in other species was well known. Hoogenboom *et al.* teach a method of making a humanized antibody where the CDR of one antibody is substituted and inserted into the homologous region of a human antibody to provide the structural properties of a complete antibody. Hoogenboom *et al.* provide several reasons to generate a chimeric humanized antibody with a known specificity. Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to use the methods of Hoogenboom *et al.* to generate chimeric humanized antibodies to Cyr61. One having ordinary skill in the art would have been motivated to generate humanized antibodies for any one of the reasons discussed by Hoogenboom *et al.* as would be required for further use. There would have been a reasonable expectation of success given the general results Hoogenboom *et al.* to generate a chimeric antibody to other proteins, to adapt the methodology to generate a Cyr61 specific antibody from sources such as O'Brien *et al.* or Yang *et al.*

Thus, the claimed invention as a whole was clearly *prima facie* obvious.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Woitach whose telephone number is (571) 272-0739.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Reynolds, can be reached at (571) 272-0734.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group analyst Dianiece Jacobs whose telephone number is (571) 272-0532.

Joseph T. Woitach

Joe Woitach
AU1632